

WHAT IS CLAIMED IS:

1. A nonreciprocal circuit device comprising:

a permanent magnet;

a magnetic material; and

a plurality of center conductors arranged on the magnetic material, said permanent

5 magnet, said magnetic material, and said center conductors being housed inside a metal case formed by bonding a plurality of metal members,

wherein a protruding portion is formed on a first bonding surface of at least one metal member among said plurality of metal members, the protruding portion contacts a second bonding surface of another one of said metal members, and the protruding portion is resistance-welded to the second bonding surface.

2. A nonreciprocal circuit device according to Claim 1, wherein said protruding portions are formed on only one of the first and second bonding surfaces of the metal members which are to be bonded together.

3. A nonreciprocal circuit device according to Claim 2, further comprising one additional protruding portion formed on said first bonding surface and resistance-welded to said second bonding surface.

4. A nonreciprocal circuit device according to Claim 2, further comprising two additional protruding portions formed on said first bonding surface and resistance-welded to

said second bonding surface.

5. A nonreciprocal circuit device according to Claim 1, wherein the height of the protruding portion above said first bonding portion is 150 μm or less.

6. A nonreciprocal circuit device according to Claim 1, wherein said metal members include an upper metal case and a lower metal case.

7. A communication device comprising at least one of a transmitting circuit and a receiving circuit, and connected thereto, a nonreciprocal circuit device according to Claim 1.

8. A case for a nonreciprocal circuit device, comprising:
an upper metal case and a lower metal case; one of said metal cases having a first bonding surface and the other of said metal cases having a second bonding surface;
a protruding portion being formed on said first bonding surface, said upper and lower metal cases being assembled with said protruding portion in contact with said second bonding surface so as to form a case for a nonreciprocal circuit device.

9. A case for a nonreciprocal circuit device according to Claim 8, wherein said protruding portion and said second bonding surface comprise weld material which bonds together said upper and lower metal cases.

10. A case for a nonreciprocal circuit device according to Claim 9, wherein said first

bonding surface is on said upper metal case.

11. A case for a nonreciprocal circuit device according to Claim 10, wherein said protruding portion contacts an inside surface of said lower metal case.

12. A method of manufacturing a nonreciprocal circuit device comprising a permanent magnet, a magnetic material, and a plurality of center conductors arranged on the magnetic material, wherein the permanent magnet, the magnetic material, and the center conductors are housed inside a metal case formed by bonding an upper metal case and a lower metal case at respective bonding surfaces thereof, said method comprising the steps of:

forming a protruding portion on a bonding surface of one of the upper metal case and the lower metal case;

disposing the upper metal case and the lower metal case so that the respective bonding surfaces including said protruding portion are brought into contact with each other;

applying pressure to the upper metal case and the lower metal case by electrode terminals of a resistance welder; and

applying welding current to said case via said electrode terminals so as to resistance-weld said respective bonding surfaces via said protruding portion.

13. A method of manufacturing a nonreciprocal circuit device according to Claim 12, wherein said upper metal case is fitted into said lower metal case.

14. A method of manufacturing a nonreciprocal circuit device according to Claim 13,

wherein said protruding portion is formed on said upper metal case.

15. A method of manufacturing a nonreciprocal circuit device according to Claim 12, wherein said protruding portion is formed on said upper metal case.

16. A method of manufacturing a nonreciprocal circuit device according to Claim 12, wherein said pressure is applied to the upper metal case and the lower metal case in a direction perpendicular to the bonding surfaces.

17. A method of manufacturing a nonreciprocal circuit device according to Claim 16, wherein said pressure is applied to the upper metal case and the lower metal case in a direction parallel to the bonding surfaces.

18. A method of manufacturing a nonreciprocal circuit device according to Claim 12, wherein said pressure is applied to the upper metal case and the lower metal case in a direction parallel to the bonding surfaces.